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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,276	03/29/2004	Nathan Cohen	61732-040 (FRTK-5)	2257

7590 05/18/2005  
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Boston, MA 02109

EXAMINER
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CAO, HUEDUNG X

ART UNIT	PAPER NUMBER
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2821

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

8m

<b>Office Action Summary</b>	<b>Application No.</b> 10/812,276	<b>Applicant(s)</b> COHEN, NATHAN	
	<b>Examiner</b> Huedung X. Cao	<b>Art Unit</b> 2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 May 2005.  
 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1-9 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:  
         1. ☐ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>08/06/04</u> | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Drawings*

1. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over RAPPAPORT (US 4,851,859) in view of GELIN (US, 3,987,456).

As per claim 1, Gelin teaches the claimed "an apparatus" comprising:

a discone antenna including a cone-shaped element (Rappaport, figure 2, discone antenna 18) whose physical shape is at least partially defined by at least one

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pleat which Rappaport does not explicitly disclose. However, Gelin teaches such physical shape with pleat is widely used in the art (Gelin, figure 7). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Rappaport's discone antenna with pleated shape structure, as taught by Gelin doing so it would improve the performance of the antenna.

Claim 2 adds into claim 1, wherein the discone antenna includes a disc-shaped element whose physical shape is at least partially defined by a fractal geometry (Rappaport, figure 2, disc 28).

Claim 3 adds into claim 1, wherein the physical shape of the cone-shaped element includes a least one hole (Rappaport, figure 2, and column 3, lines 7-23).

Claim 4 adds into claim 1, wherein the physical shape of the cone-shaped element is at least partially defined by a series of pleats that extend about a portion of the cone which Rappaport does not explicitly disclose. However, Gelin teaches such physical shape with pleat is widely used in the art (Gelin, figure 7, and column 5, lines 48-51). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Rappaport's discone antenna with pleated shape structure, as taught by Gelin doing so it would improve the performance of the antenna.

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4. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over KLOPACH et al. (US 3,656,166) in view of GELIN (US, 3,987,456).

As per claim 5, Klopach teaches the claimed "an apparatus" comprising: a bicone antelma including two cone-shaped elements (Klopach, figure 3, conical members 12 and 14) whose physical shape is at least partially defined by at least one pleat which Klopach does not explicitly disclose. However, Gelin teaches such physical shape with pleat is widely used in the art (Gelin, figure 7, and column 5, lines 48-51). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Klopach's discone antenna with pleated shape structure, as taught by Gelin doing so it would improve the performance of the antenna.

Claim 6 adds into claim 5, wherein the physical shape of one of the two cone-shaped elements is at least partially defined by at least one hole (Klopach, figure 3, where a center rod extend through).

Claim 7 adds into claim 5, wherein the physical shape of one of the two cone-shaped elements is at least partially defined by a series of pleats that extend about a portion of the cone which Klopach does not explicitly disclose. However, Gelin teaches such physical shape with pleat is widely used in the art (Gelin, figure 7, and column 5, lines 48-51). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Klopach's discone antenna with pleated shape structure, as taught by Gelin doing so it would improve the performance of the antenna.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 8-9 are rejected under 35 U.S.C. 102(b) as being anticipated by RAPPAPORT (US 4,851,859).

As per claim 8, Rappaport teaches the claimed “an apparatus” comprising:  
an antenna including a disc-shaped element whose physical shape is at least partially defined by a fractal geometry (Rappaport, figure 2, disc 28).

Claim 9 adds into claim 8, wherein the physical shape of the disc-shaped element is at least partially defined by a hole (Rappaport, figure 2, and column 3, lines 7-23).

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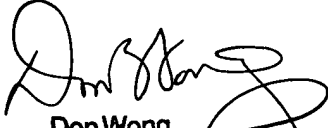
***Inquiries***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huedung Cao whose telephone number is (571) 272-1939.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong, can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Technology Center 2800